

## 12.0 Measuring oil consumption

Many complaints made about oil consumption are due to the oil level being measured using the wrong method.

The oil consumption should at the earliest be measured after a distance of 7,500 km (approx. 4,700 miles), since the process of breaking in the engine will essentially only have been completed after this distance and the oil consumption stabilised.

The oil consumption rate of an engine can only be determined by the customer by the amount of oil he has had to top up.

Oil is added as soon as the level drops below the max. mark on the dipstick, regardless of certain fundamental rules such as horizontal vehicle position, drain time etc. This can easily cause the level to become too high due to the size of the container which happens to be available (e.g. 1-ltr. canister).

Excess oil can damage the engine and is consumed more quickly due to the "splash" effect.

For this reason, we recommend allowing the oil level to drop as far as the min. mark before adding the required topping up quantity.

The difference between the two marks corresponds to about 1.0 - 1.5 litres.

The specified procedure for checking the oil level is given in the respective Owner's Handbook.

The service delegates will only deal with claims made under warranty if exact measurements by ballasting are available (see below).

### Oil consumption measurement by ballasting:

To assess a warranty or goodwill claim, only the following oil consumption measurement by ballasting can be accepted (this must have been carried out by a BMW specialist workshop):

- The engine must be free of leaks and any leaks found must be eliminated before measuring the oil consumption.
- Drain off the engine oil while the engine is at normal operating temperature.
- Unscrew the primary flow oil filter (the engine oil will flow back into the oil sump from the oil filter housing).
- Allow 10 minutes for the oil to drain.
- Retighten the primary flow oil filter.
- Pour in the specified oil quantity for the engine type in question (with filter change).
- Drive the vehicle for a distance of approx. 1,000 km (600 miles).
- Drain off the engine oil while the engine is at normal operating temperature.
- Unscrew the primary flow oil filter (the engine oil will flow back into the oil sump from the oil filter housing).
- Allow 10 minutes for the oil to drain.
- Retighten the primary flow oil filter.
- Weigh the drained off oil.  
Engine oil has a density of about 0.86 g/ccm at room temperature.

- Oil consumption =  
$$\frac{\text{oil quantity added (ccm)} - \text{oil quantity drained (g)} : 0.86 \text{ g/ccm}}{\text{mileage reading when draining} - \text{mileage reading when adding oil}}$$

- Example:

Oil quantity added at mileage reading (km) 44,800: 4,000 ccm  
Oil quantity drained off at mileage reading (km) 45,900: 2,700 g  
Oil consumption =  
$$\frac{4,000 \text{ ccm} - 2,700 \text{ g} : 0.86 \text{ g/ccm}}{45,900 \text{ km} - 44,800 \text{ km}}$$
  
= 0.78 ltr./1,000 km

For BMW spark-ignition and diesel engines, the maximum oil consumption is 0.7 ltr./1000 km.

Due to their higher power and engine-speed levels, M-Power engines may have a maximum oil consumption of 1.5 ltr./1000 km.

**Record on engine oil consumption measurement:**

Please refer to Enclosure 13.0